

Appl. No. : 09/380,412  
Filed : January 19, 2000

### AMENDMENTS TO THE CLAIMS

Claims 1-11: canceled

12. (currently amended) A method of operating a cordless communication system comprising a mobile terminal of a public ~~mobile-cellular~~ communication system and having a base station which is connectable to a public fixed network and compatible at an air interface with the ~~mobile-cellular~~ communication system that has at least one authentication function, comprising:

reading and writing from and to, respectively, at least a first ~~identification~~ subscriber identity module through a read and write unit of the base station, wherein sections of data of the first ~~subscriber identity identification module~~ used in the base station are identical to sections of data stored on a second subscriber identity identification module of an access-authorized mobile terminal authorized to access the public cellular communication system;

processing data read from the first ~~subscriber identity identification module~~ through software implemented in the base station, using a random number generated at the base station, so as to generate a first authentication result;

processing data read from the second ~~subscriber identity identification module~~, using the random number generated at the base station, so as to generate a second authentication result;

authenticating the mobile terminal with regard to the base station through the first authentication result and the second authentication result, wherein the base station fulfills the same functions and tasks with respect to access control and authentication as a home location register and, respectively, an authentication center of the ~~mobile-public cellular~~ communication system, and wherein the authentication is performed without accessing a home location register in a ~~the mobile-public cellular~~ communication system; and

operating the mobile terminal through the public fixed network if the authentication has been successful.

13. (currently amended) The method of Claim 12, further comprising blocking authorization of the mobile terminal through a network carrier of the ~~mobile-public cellular~~ communication system to log into the base station of the cordless communication system.

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14. (currently amended) The method of Claim 12, further comprising storing other data on the subscriber identity identification module in a tamper-proof manner, the other data including allowed frequencies, a maximum permitted output powers for the base station and the mobile terminal, allowed services, and initialization parameters which a network carrier desires to influence and which constitute a general framework for the operation of the base station of the cordless communication system.

15. (currently amended) The method of Claim 12, further comprising operating the base station of the cordless communication system so that the air interface operates in a frequency spectrum of a the public mobile-cellular communication system.

16. (previously presented) The method of Claim 12, wherein the transmitted data is encrypted at the air interface.

17. (currently amended) The method of Claim 12, further comprising programming a timer within the base station to a predetermined time by a network carrier, and automatically resetting the timer by a subscriber if an authorized use occurs, wherein the base station, if not used after the predetermined time has lapsed, loses authorization to operate a transmitter at frequencies assigned to the mobile-public cellular communication system.

18. (previously presented) The method of Claim 17, further comprising restarting the base station if the base station is automatically shut off due to lapse of the predetermined time.

19. (previously presented) The method of Claim 18, further comprising permitting said restarting of the base station only within a predefined time window.

20. (currently amended) A cordless communication system for the operation of a mobile terminal of a mobile-cellular communication system with a base station that is connected to a public fixed network and that is compatible at an air interface with the mobile-cellular communication system that has at least one authentication function, comprising:

a read/write unit within a base station, the read/write unit configured to read and write information from and to, respectively, at least a first subscriber identity identification module, wherein sections of data of the first subscriber identity identification module used in the base station are identical to sections of data on a second subscriber identity identification module of ~~an access-authorized~~ a mobile terminal authorized to access the cellular communication system; and

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software implemented in the base station for processing of data read from the first subscriber identity identification module and for authenticating the mobile terminal relative to the base station through the processed data based on the first identification module, wherein the base station fulfills the same functions and tasks with respect to access control and authentication as the home location register and, respectively, the authentication center of the ~~mobile-cellular~~ communication system, by using the processed data based on the first subscriber identity identification module and an authentication result generated by processing data read from the second subscriber identity identification module, and wherein the authentication is performed without accessing a home location register in a ~~mobile-the~~ cellular communication system.

21. (currently amended) The cordless communication system of Claim 20, wherein the first subscriber identity identification module is a chip card configured for a predetermined standard.

22. (previously presented) The cordless communication system of Claim 21, wherein the predetermined standard is selected from the group consisting of ISO ID-1, ID-000, DCS 1800, and PCS 1900.

23. (currently amended) The cordless communication system of Claim 20, wherein the second subscriber identity identification module is a chip card.

24. (currently amended) The method of Claim 12, wherein the second subscriber identity identification module is a chip card.

25. (currently amended) A method of operating a cordless communication system comprising a mobile terminal of a public ~~mobile-cellular~~ communication system and having a base station which is connectable to a public fixed network and compatible at an air interface with the ~~mobile-public cellular~~ communication system that has at least one authentication function, comprising:

reading and writing from and to, respectively, at least a first identification module through a read and write unit of the base station, wherein a secret key is stored on the first identification module and a second identification module of ~~an access authorized-a~~ mobile terminal authorized to access the public cellular communication system;

generating a random number and generating a first authentication result based on the random number and the secret key using a ciphering algorithm at the base station;

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generating a second authentication result based on the random number and the secret key using a ciphering algorithm at the access-authorized mobile terminal;

authenticating the mobile terminal with regard to the base station through the first and second authentication results such that the mobile terminal authenticates directly with the base station, wherein the base station fulfills the same functions and tasks with respect to access control and authentication as a home location register and, respectively, an authentication center of the ~~mobile~~public cellular communication system, and wherein the authentication is performed without accessing a home location register in ~~a the mobile~~ public cellular communication system; and

operating the mobile terminal through the public fixed network if the authentication has been successful.

26. (currently amended) A method of operating a cordless communication system comprising a mobile terminal of a public ~~mobile~~cellular communication system and having a base station which is connectable to a public fixed network and compatible at an air interface with the ~~mobile~~public cellular communication system that has at least one authentication function, comprising:

transmitting a specific identification periodically from the base station to indicate presence and readiness for operation during a standby mode;

reading and writing from and to, respectively, at least a first identification module through a read and write unit of the base station, wherein sections of data of the first identification module used in the base station are identical to sections of data stored on a second identification module of ~~an access-authorized a mobile terminal authorized to~~ access the public cellular communication system;

processing data read from the first identification module through software implemented in the base station so as to generate a first authentication result;

processing data read from the second identification module so as to generate a second authentication result;

authenticating the mobile terminal with regard to the base station using the first and second authentication results, wherein the base station fulfills the same functions and tasks with respect to access control and authentication as a home location register and, respectively, an authentication center of the ~~mobile~~public cellular communication system,

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and wherein the authentication is performed without accessing a home location register in ~~at the mobile public cellular~~ communication system; and

operating the mobile terminal through the public fixed network if the authentication has been successful.

27. (currently amended) A method of operating a cordless communication system comprising a mobile terminal of a public ~~mobile-cellular~~ communication system and having a base station which is connectable to a public fixed network and compatible at an air interface with the ~~mobile-public cellular~~ communication system that has at least one authentication function, comprising:

reading and writing from and to, respectively, at least a first subscriber identity module (SIM) card through a read and write unit of the base station, wherein sections of data of the first SIM card used in the base station are identical to sections of data stored on a second SIM card of an ~~access-authorized~~ a mobile terminal authorized to access the cellular communication system;

processing data read from the first SIM card through software implemented in the base station, using a random number generated at the base station, so as to generate a first authentication result;

processing data read from the second SIM card, using the random number generated at the base station, so as to generate a second authentication result;

authenticating the mobile terminal with regard to the base station through the first authentication result and the second authentication result, wherein the base station fulfills the same functions and tasks with respect to access control and authentication as a home location register and, respectively, an authentication center of the ~~mobile-public cellular~~ communication system; and

operating the mobile terminal through the public fixed network if the authentication has been successful.